



Name \_\_\_\_\_ Date \_\_\_\_\_

Practice: For use after Lesson 8.2, Algebra 2 with Trigonometry

**Algebra 2**  
**Unit #2**  
**WS #11**

## Multiplying and Dividing Radicals

Simplify.

1.  $\sqrt{18}$  \_\_\_\_\_
2.  $\sqrt{28y^3}$  \_\_\_\_\_
3.  $\sqrt[3]{54}$  \_\_\_\_\_
4.  $\sqrt[3]{24c^8}$  \_\_\_\_\_
5.  $\sqrt{5} \cdot \sqrt{5}$  \_\_\_\_\_
6.  $\sqrt{13} \cdot \sqrt{13}$  \_\_\_\_\_
7.  $\sqrt[3]{9a^2} \cdot \sqrt[3]{9a^2}$  \_\_\_\_\_
8.  $\sqrt{2cd} \cdot \sqrt{2cd}$  \_\_\_\_\_
9.  $2\sqrt[3]{16n^4} \cdot 3\sqrt[3]{2n^2}$  \_\_\_\_\_
10.  $\sqrt[3]{25x^5y} \cdot 5\sqrt[3]{10x^2y^4}$  \_\_\_\_\_
11.  $\frac{\sqrt{20}}{\sqrt{5}}$  \_\_\_\_\_
12.  $\frac{\sqrt{150}}{\sqrt{3}}$  \_\_\_\_\_
13.  $\frac{\sqrt{200x^3}}{\sqrt{2x^3}}$  \_\_\_\_\_
14.  $\frac{\sqrt{54c^2d^4}}{\sqrt{3cd}}$  \_\_\_\_\_
15.  $2(\sqrt{3} + 2\sqrt{7})$  \_\_\_\_\_
16.  $-3(2\sqrt{5} - \sqrt{11})$  \_\_\_\_\_
17.  $\frac{2 + \sqrt{3}}{\sqrt{3}}$  \_\_\_\_\_
18.  $\frac{\sqrt{6} - \sqrt{20}}{\sqrt{5}}$  \_\_\_\_\_
19.  $\sqrt{3}(\sqrt{12} + 4)$  \_\_\_\_\_
20.  $\sqrt{2}(7 - \sqrt{10})$  \_\_\_\_\_
21.  $\sqrt[3]{4y} \cdot \sqrt[3]{6y}$  \_\_\_\_\_
22.  $\sqrt[3]{6c^4} \cdot \sqrt[3]{9c^2}$  \_\_\_\_\_
23.  $\frac{12\sqrt{45y^3}}{3\sqrt{5y}}$  \_\_\_\_\_
24.  $\frac{48\sqrt{42x^2}}{8\sqrt{6x}}$  \_\_\_\_\_
25.  $\frac{-4\sqrt{5}}{-7\sqrt{2n^3}}$  \_\_\_\_\_
26.  $\frac{2\sqrt{7x^2y}}{-3\sqrt{18x^3y}}$  \_\_\_\_\_
27.  $\frac{3 + \sqrt{7}}{\sqrt{8}}$  \_\_\_\_\_
28.  $\frac{\sqrt{11} + 6}{\sqrt{27}}$  \_\_\_\_\_

## Applications

29. **Geometry** A rectangular picture is  $\sqrt{30}$  cm by  $\sqrt{15}$  cm. Find the area of the picture. \_\_\_\_\_
30. **Physics** A man walks  $8\sqrt{40}$  mi in  $4\sqrt{10}$  h. Find the rate at which he walks. \_\_\_\_\_

## MIXED PRACTICE

Simplify.

31.  $\sqrt{64}$  \_\_\_\_\_
32.  $\sqrt{25c^6}$  \_\_\_\_\_
33.  $\sqrt{50c^3}$  \_\_\_\_\_
34.  $-\sqrt{81c^{10}d^{24}}$  \_\_\_\_\_
35.  $\sqrt{(d-6)^2}$  \_\_\_\_\_
36.  $\sqrt[3]{64x^6y^{12}}$  \_\_\_\_\_
37.  $-\sqrt{0.000049b^{30}c^{18}}$  \_\_\_\_\_